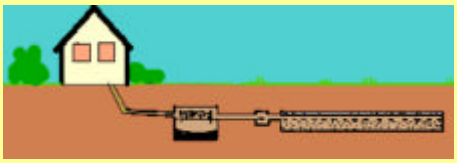

HOMEOWNERS AND USERS GUIDE FOR ONSITE WASTEWATER DISPOSAL SYSTEMS

The County of San Diego Department of Environmental Health has developed this homeowner's and users guide for onsite wastewater disposal systems as part of the Onsite Wastewater Management Program.

WHY THIS GUIDE?

About 15% of the people living in the unincorporated area of San Diego County use some type of onsite system for the treatment and disposal of domestic wastewater. Onsite systems commonly consist of a septic tank and a soil absorption system ("leach field" or "seepage pit"). Well designed and constructed septic systems in suitable locations can provide low cost treatment for wastewater; but like any systems, they must be properly maintained.

When homeowners and tenants don't know how to care for their systems, expensive failures can result. When a septic tank fails, plumbing backs up. Wastewater in the leach field or seepage pit can be forced to the ground surface where its presence can cause a potential health hazard. Also, natural water bodies may become polluted. Ultimately, the homeowner may have to install a new leach field or seepage pit. Therefore, it makes good economic and environmental sense to take care of your septic system. The operation and maintenance of septic systems is discussed in this guide.

HOW A SEPTIC SYSTEM WORKS

A septic system consists of a septic tank and a soil absorption system. Wastewater from the home is discharged into a septic tank where most of the solids settle. From the septic tank, the clarified liquid is discharged into the soil absorption system where it can soak into and filter through the soil.

The Septic Tank

A typical tank that serves a three to five bedroom dwelling has a volume of 1,000-1,500 gallons. It may be made of concrete, fiberglass, or plastic and is about nine feet long and five feet deep and wide. It has interior baffles to help retain the solids and manholes on the top to permit inspection and cleaning. Heavy solids form a sludge layer at the bottom of the tank, and grease and light material form a scum layer near the top. Bacteria in the tank can break down some of these solids. Wastewater flows from the clear space between the scum and sludge layers in the second compartment to the soil absorption system.

The Soil Absorption System

The most common absorption system design consists of a series of trenches three-to-five feet deep. A perforated pipe is used to distribute the wastewater throughout the absorption system where it eventually soaks into the ground. Treatment of the wastewater is accomplished as it is absorbed through the soil. Most soils in San Diego County do a good job, but very coarse soil (sand) may not provide much treatment and very fine soil (clay) may be too tight to allow much wastewater to pass through.

WHAT CAN GO WRONG?

Little can go wrong with the septic tank itself. Concrete or fiberglass tanks sometimes suffer structural damage and/or deteriorate. Problems occur most in the plumbing or in the absorption field. Blockages in the pipe between the home and tank can usually be cleared with plumbing tools. If your plumbing backs up suddenly under normal use in dry weather, blockage is the most probable cause. However, some pipe blockages (caused by tree roots entering the pipe or by detergent buildup) can develop over a period of time.

More serious difficulties occur when the absorption system becomes clogged. When sludge and scum are not removed periodically from the tank, they accumulate until they are washed out into the soil absorption field. The carryover of solids from the septic tank is the most common cause of soil absorption system clogging. Eventually, either the perforated distribution pipe or the pores in the earth walls of the soil absorption system become clogged. A system that is only partially clogged may work well during dry weather, but when winter rains soak the ground or when household water use is high, the system becomes overloaded and a failure becomes apparent. You may be able to clear blockages in the distribution pipe; however, once the soil becomes clogged it will no longer accept the wastewater. You will need a new absorption system – the typical cost in San Diego County ranges from about $1,500-$5,000 as of January 1999. It's a lot cheaper to keep your system working well through proper maintenance.

You can suspect a malfunctioning absorption field if:

- there are odors, persistent wet spots and/or lush growth in the area of your system
- your plumbing becomes sluggish over a period of time
- your plumbing becomes sluggish when it is being used heavily or during wet weather
- problems persist even though the septic tank has been cleaned recently

PREPARING YOUR SEPTIC TANK FOR INSPECTION

The County of San Diego's Onsite Wastewater Management Program provides information for homeowners to assist in the proper management of their onsite wastewater system.

Locating Your Septic Tank

If the location of your septic tank is unknown, you can find it by probing with a metal rod, following the pipeline from the house, or by listening for the noise a plumber's snake makes when it hits the tank inlet. Dig a hole to uncover the manholes in the top of the tank.

Installation of Access Risers and Covers

If your septic tank is more than two feet below the ground surface and is not equipped with two access risers, they must be installed to comply with the Department's septic tank guidelines. This is best done at the time you uncover your septic tank.

Risers can be constructed out of plastic or redwood. To prevent odor problems, the covers should be sealed with a rubber gasket or non-hardening caulking compound. The covers should also be secured positively so they won't be a hazard for curious children or animals. There should be a minimum of 12" of soil on top of the covers.

Record the Location of Your Septic Tank

Once you have found your tank, make a diagram showing exactly where it is. Keep one copy with your deed and another where it will be handy. The access riser will also serve to mark the location of the tank. See the attached form to record the location of your tank.

CLEANING YOUR SEPTIC TANK

The most important step in maintaining trouble free septic system operation is to remove the solids from the tank before they start to wash out into the absorption field and before you begin to observe signs that your system is failing. Remember, once the soil absorption system is clogged, cleaning the tank will do little good – you will probably need a new absorption field.

Pumping Out Your Septic Tank

If your septic tank needs to be pumped, it would be advisable to consult a professional. Septic tank servicers are listed under "Septic Tanks" in the yellow pages of the phone book. They are experienced in locating, uncovering and pumping septic systems. If necessary, they will pump the contents of the tank into a tank truck for disposal at an approved site. Be sure that both compartments of the tank are emptied. Pumpers usually charge $140.00-$170.00 for pumping a tank, and about $30.00 per hour for locating and uncovering it (April 1999 costs). As with any service, it often pays to get several estimates.

Frequency of Cleaning

How often your tank will need pumping depends largely on the size of the tank, the number of people in the household, and whether or not garbage disposal units are used. As a general rule, tanks will need to be cleaned every three to five years. The period can vary depending on usage. The bottom line is that the tank should be cleaned before solids are carried over into the absorption field. You have a considerable investment in your septic system – don't take a chance on needing an expensive absorption field replacement.

OTHER MAINTENANCE TIPS AND SUGGESTIONS

The following tips and suggestions are designed to increase the useful life of your septic system. Their applicability and effectiveness will vary with each home. The Department of Environmental Health also welcomes additional recommendations from homeowners or tenants.

Minimize the Liquid Load

The less wastewater you produce, the less the soil will have to absorb. WATER CONSERVATION IS THE CHEAPEST AND EASIEST WAY TO PROTECT YOUR SEPTIC SYSTEM.

- Replace your existing toilets with ultra-low flush (ULF) units, which use less than 1.6 gallons per flush. Install low-flow showerheads.
- Use a water-saving device in your toilet tank (if it is not a ULF unit) and don't flush unnecessarily.
- Repair leaky fixtures. Check your toilet by dropping food dye in the tank and see if it shows up in the bowl without flushing.
- Wash clothes only when you have a full load. Avoid doing several loads in one day.
- Take short showers instead of baths. Don't turn the shower on all the way – do turn off the water while lathering.
- Don't let water run while washing teeth, hands, vegetables, dishes, etc. Use a stoppered basin.
- Don't let rain water drain into the leach field area from higher ground. Make sure rain gutter downspouts are not connected to your septic tank and drain away from the absorption system.
- Don't use an automatic (self-regenerating) water softener.
- Consider installing a gray water system to irrigate landscaping. Contact the Department of Environmental Health for additional information on gray water system requirements.
- Many other ways of conserving water exist. Be alert for other water saving ideas!

Minimize the Solids Load

A good rule is: Don't use your septic system for anything that can be disposed of in some other way. The less material you put into your septic tank, the less often it will need pumping.

- Avoid using a garbage disposal unit. Compost scraps or throw them out with the trash.
- Collect grease in a container near the sink rather than pouring it down the drain. Throw the solidified grease out with the trash.
- Minimize the discharge of paper products. Non-degradable items, such as disposable diapers, sanitary napkins, kleenex, cigarettes, and paper towels are especially harmful. Use a good quality toilet tissue that breaks up easily when wet.
- Only three things should go into the septic tank: human wastes, toilet paper, and water from toilets, bathing fixtures, dishwashers and kitchen sinks.
- Use an effluent filter.

Don't Use Septic Tank Additives

Chemicals, bacteria, enzymes, etc. do not help solids break down in the tank and will not reduce the need for pumping. Some additives can actually damage concrete septic systems and the soil.

Keep Toxic Chemicals Out of Your System

The disposal of toxic chemicals into your septic system is unlawful and detrimental to your septic system, the environment, and to septic service personnel. Typical household products such as soaps, detergents, bleaches, drain cleaners or other materials, which are normally used in the household, will have no appreciable adverse affect on the system. However, since essential septic tank organisms might be adversely affected by large doses of household chemicals and disinfectants, moderation should be the rule.

Toxic chemicals that should into be disposed of into the septic system include but are not limited to the following:

- Pesticides
- Herbicides
- Solvents
- Gasoline or other fuel products
- Motor oil
- Antifreeze
- Brake fluid
- Radiator cleaners
- Caustic chemicals
- Degreasers
- Paints
- Paint thinners or strippers
- Wood preservatives
- Photographic chemicals
- Electroplating solutions
- Fiberglass resins

Be sure to check with Department of Environmental Health staff before chemicals from a hobby or home industry are discharged into the system.

Keep Heavy Vehicles off Your System

Underground pipes and soil porosity can be damaged by driving over them repeatedly. Septic tanks and seepage pits must be specially designed if they are to be located under driveways or other areas subjected to vehicle traffic. Leach fields are not allowed in areas of vehicular traffic.

If Your Leach Field System Fails

If you leach field has failed, it will have to be replaced. However, don't abandon the old system completely. Make provisions so that you can switch back to the old field. Given some time to dry out, the old field will be partially renewed and you can begin alternating between fields. The rest period will help keep both systems in good condition.

Operation and Inspection of Leach Field

If you have a dual system, don't forget to switch fields regularly.

If your leach field system has inspection pipes, check them regularly. Liquid deeper than four to six inches in the bottom of the inspection pipe is an early indication of problems.

INSPECTING YOUR OWN TANK

Should you suspect a problem, you can inspect your own tank. To inspect, remove the manhole cover at the inlet end. The best practice is to check both scum and sludge levels, but the following simplified procedure works well in most cases. Use a shovel to push the scum layer away from the side of the tank so that you can estimate its thickness. If the thickness of the scum layer is a foot or more, arrange to **have your tank pumped immediately**. Replace the manhole cover and wash off the shovel and your hands as a sanitary precaution.

NEED MORE INFORMATION?

Contact your local Department of Environmental Health Office if you are experiencing problems or have any questions. We are here to help!

Our offices are located at:

El Cajon Office
200 E. Main St., 6Th Fl.
El Cajon, CA 92020
(619) 441-4030

San Diego Office
5201 Ruffin Rd, Ste. C
San Diego, CA 92123
(619) 565-5173

San Marcos Office
338 Via Vera Cruz
San Marcos CA 92069
(760) 471-0730